Amendments to the Specification:

Please replace the paragraph beginning at page 3, line 6, with the following rewritten paragraph:

-- Cathode display tubes (CRTs)-, color flat panels (both active and passive matrix types) and high definition televisions (HDTVs) provide chromaticity diagrams -that are similar to the CRT model shown in Figure 2. However, the sRGB chromaticity diagram lacks a range of gamut that includes all colors, and conversion of sRGB color data values is non-linear, thus often resulting in undesired results.--

Please replace the paragraph beginning at page 4, line 19, with the following rewritten paragraph:

-- Mapping the color values to an expanded RGB/RGBA or expanded sRGB/sRGBA space may include utilizing multiplication of R_0,G_0,B_0 values by a predetermined matrix, where the R_0,G_0,_and B_0 values denote normalized red, green and blue components for a color value. The R_0,G_0,B_0 values may be predetermined based on X, Y and Z values, where X, Y, and Z denote 1931 CIE XYZ values whose Y value has been normalized to 1. Where the R_0,G_0,_and B_0 values denote normalized red, green and blue components for a color value, the R_0,G_0,_and B_0 values may simply be multiplied by 8192 to obtain the 16 bit components R_{16}, G_{16}, and B_{16}. Where 16 bits are used for color data values, a sign, integer and decimal portion may be set forth, and where selected, transparency information may be stored. Clipping may be used to convert 16 bit values to 8 bit values. As desired, color data values may be non-premultiplied, premultiplied, or normalized premultiplied.--

Please replace the paragraph beginning at page 6, line 9, with the following rewritten paragraph:

-- Figure 2 is a schematic graphical representation of colorspaces for a representative Canon CLC500 color copier/printer, General RGB color values, and –sRGB values upon a CIE colorspace diagram as is known in the art.--

Please replace the paragraph beginning at page 7, line 20, with the following rewritten paragraph:

-- Advanced graphic systems require anti-aliasing features (removing ragged edges) and blending (translucency) effects. To achieve these anti-aliasing features and blending effects, an extra component called an "alpha channel" was introduced. To utilize the alpha channel, the linear color components must be expressed in terms of their intensities. However, sRGB and other color management systems typically store color data values in non-linear 8-bit values per channel. The non-linearity is expressed as a "gamma value". For example, Microsoft®'s and Apple®'s color management systems are 2.2 and 1.8, respectively. When only 8 bits were available for color data value representation, it was necessary to convert the color data non-linearly~~-~~, creating a large gap in the lower intensity values and causing the resulting images to show contours. However, when the size of each component is extended to higher bit (12 bit or higher), the non-linearity requirement is eliminated. Thus, in an embodiment with 12 or more bits for each component, color profiles do not require clipping to a narrower gamut and component values do not have to be non-linearized, avoiding confusion of different gamma values in different color standards. Since, in this embodiment, color values are standardized, standard images may be stored in the XsRGB format without attaching a standardized profile such as an ICC (International Color Consortium) profile to clarify the colors intended. Where desired, an alpha channel may be implemented to store information on transparency. Also, where selected, the color values may be premultiplied by alpha channel values to provide efficient blending.--

Please replace the paragraph beginning at page 9, line 7, with the following rewritten paragraph:

--Only 12 coefficients are needed to define XsRGB. In addition to the –rotational part $(m_{RZ}, etc.)$, the transitional part $(t_R, etc.)$ is used. With this notation, the white point may be addressed as well as the black point. Using the inverse of the above matrix, the reverse relation from -XsRGB to CIE XYZ space is given by:--

Please replace the paragraph beginning at page 10, line 4, with the following rewritten paragraph:

-- It is desirable for XsRGB to have a simple transform to sRGB in D65. D50 and D65 are the standard illuminans (the spectrum distributions of the light source) defined by CIE. D50 and D65 are the spectrum distributions similar to the Black Body radiation of 5000 and 6500 Kelvin, respectively. Indeed, it is desirable for XsRGB to be identical to sRGB when its value is inside the range of sRGB. From the -sRGB specification, the coefficients of Eq. (1b) and Eq. (2b) are determined as:--

E6

Please replace the paragraph beginning at page 11, line 20, with the following rewritten paragraph:

--For an example, the white point of D50 is $(x_{D50}, y_{D50}) = (0.3457, 0.3585)$. The corresponding CIE XYZ value -is $(X_{D50}, Y_{D50}, Z_{D50}) = (0.9643, 1, 0.8251)$. Hence the scaling matrices are--

E7

Please replace the paragraph beginning at page 12, line 13, with the following rewritten paragraph:

-- The appearance match is obtained if the XsRGB values are calculated from the conversion matrix of the device white point. The absolute match may be obtained if the conversion matrix of -D65 is used irrespective of the device white point.--

E8

Please replace the paragraph beginning at page 14, line 6, with the following rewritten paragraph:

-- The above conversions correspond to clipping below 0 and above 8192 of the 16 bit XsRGB -when converting to 8 bit sRGB. The clipping routine may be further modified as desired.--

E9

Please replace the paragraph beginning at page 15, line 14, with the following rewritten paragraph:

E10

-- Each color component is allowed to go beyond 1 and go below 0. The meaning of alpha, A_0, is considered in the following way. When a source image, -S, is overlaid on the destination image, D, the resultant image, D', is obtained as--

Please replace the paragraph beginning at page 15, line 20, with the following rewritten paragraph:

E11

-- where *s, d, and* d' are one of the normalized color components of the image S,_D, and D' at the corresponding pixels, respectively, and a is the alpha value of the source image S at the considering pixel. When $a = 0$, the resultant image remains the same as the destination image. This case is called transparent. When $a = 1$, the resultant image is the same as the source image. This case is called opaque. When a is between 0 and 1, the resultant image is the mixed image between the source and destination images. Usually a- is a translucency parameter ranging from transparent (=0) to opaque (=1). However, -Eq. (13) may be regarded as the interpolation equation. Hence, when $a< 0$ or $a > 1$, Eq. (13) is very well defined and is extrapolating the source and destination images. The alpha value is an interpolation/ extrapolation parameter. a may be smaller than 0 or larger than 1. $a < 0$ is defined as "super transparent" and $a > 1$ is defined as "super opaque." Clearly, colors with the super transparent or super opaque alpha value may fall within an RGB space or outside the RGB space.--

Please replace the paragraph beginning at page 16, line 9, with the following rewritten paragraph:

E12

-- Figure 4 is a flow chart showing steps in accordance with one embodiment of the method of the present invention. The method provides high quality error-free conversion of color images and includes the steps of: obtaining 402 color values; mapping 404 the color values to an expanded sRGB/sRGBA space; and labeling 406 an image determined by mapped color values as an expanded sRGB/sRGBA colorspace image. Obtaining 402 the color values may be simply receiving input color values; alternatively, obtaining 402 color values may include measuring the

color values. The expanded sRGB or sRGBA space typically includes at least the visible range of color values. Thus, the expanded sRGB or sRGBA space generally includes a colorspace defined by a chromaticity diagram that extends into negative component values and beyond 1.0 when normalized to 1.0 in sRGB. Where selected, mapping 404 the color values to an expanded sRGB or sRGBA space may include utilizing multiplication of R'_0, G'_0, and B'_0 -values by a predetermined matrix, where the R'_0, G'_0, and B'_0 values denote normalized red, green and blue components for a color value. In one embodiment, the R'_0, G'_0, ~~,~~and B'_0 values are obtained in accordance with equation (10) above. Where color data values have 16 bits, 1 bit is used for a sign, 2 bits are used for an integer part, and a remaining 13 bits are used for a decimal portion. The16 bit components R_{16}, G_{16}, and B_{16} ~~.~~for the color data values may be given by equation (2c). Where color data values have been mapped to 16 bit values, mapping may include clipping the 16 bit values below 0 and above 8192 to convert ~~-~~the 16 bit values to 8 bit values. As described above, the color data values may be non-premultiplied, premultiplied or normalized premultiplied color data values.--

E12

Please replace the paragraph beginning at page 19, line 19, with the following rewritten paragraph:

-- With reference to Figure 7, an exemplary system for implementing the invention includes a general purpose computing device in the form of a conventional personal computer 720, including a processing unit/processor 721, a system memory 722, and a system bus 723 that couples various system components including the system memory to the processing unit/processor 721. The system bus 723 may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. The system memory includes read only memory (ROM) 724 and random access memory (RAM) 725. A basic input/output system 726 (BIOS), containing the basic routines that helps to transfer information between elements within the personal computer 720, such as during start-up, is stored in ROM 724. The personal computer 720 further includes a hard disk drive 727 for reading from and writing to a hard disk, not shown, a magnetic disk drive 728 for reading from or writing to a removable magnetic disk 729, and an optical disk drive 730

E13

for reading from or writing to a removable optical disk 731 such as a CD ROM or other optical media. The hard disk drive 727, magnetic disk drive 728, and optical disk drive 730 are connected to the system bus 723 by a hard disk drive interface 732, a magnetic disk drive interface 733, and an optical drive interface 734, respectively. The drives and their associated computer-readable media provide nonvolatile storage of computer readable instructions, data structures, program modules and other data for the personal computer 720. Although the exemplary environment described herein employs a hard disk, a removable magnetic disk 729 and a removable optical disk 731, it should be appreciated by those skilled in the art that other types of computer readable media which can store data that is accessible by a computer, such as magnetic cassettes, flash memory cards, digital video disks, Bernoulli cartridges, random access memories (RAMs), read only memories (ROMs), and the like, may also be used in the exemplary operating environment.--

E13

Please replace the paragraph beginning at page 22, line 4, with the following rewritten paragraph:

-- Thus, as shown in Figure 8, the present invention provides a method of representation of color in images using color data values for an expanded colorspace, e.g., an expanded RGB/RGBA colorspace, that encompasses at least a visually perceptible colorspace, having at least a precision sufficient to represent visible colors substantially without visually perceptible error. The method includes the steps of: representing 802 the color data values as perceptually visible data values in an expanded RGB/RGBA space and labeling 804 an image determined by the perceptually visible data values as an expanded RGB/RGBA colorspace image. The method may also include mapping 806 the perceptually visible data values of the image to color data values of another selected destination colorspace. Where the perceptually visible data values may lie outside a predetermined range, -the mapping may include clipping the perceptually visible data values for the selected destination colorspace. Mapping may include utilizing a predetermined transformation function that maps the perceptually visible data values to color data values in the selected destination colorspace. Typically, the expanded RGB/RGBA colorspace is linear in visual intensity.--

E14